flexible and can be modified on line without any effect on the client. In other perspective, there are some disadvantages of the web based system. For example, the elasticity is not good enough, especially on the formatted printout, connection to the database is not as easy as traditional applications, and different browsers are not well-matched with each other in the HTML format.

Case Study 2

Now, let's look into the portal hypertension disease that has been one of the hot button issues nowadays. Portal hypertension disease is considered as silent killer. In general, it affects a lot people globally. Usually, portal hypertension occurs without presenting sign and symptoms. However if the pressure of the blood is very high, the people may develop headache, blur red vision, dizziness and bleeding of the nose. According to Bosch, Berzigotti, Pagan and Abraldes [5], portal hypertension is an increase in the blood pressure within a system of veins called the portal venous system. Normally, the veins come from the stomach, intestine, spleen and pancreas, merge into the portal vein, which then branches into smaller vessels and travels through the liver. If the vessels in the liver blocked, it is hard for the blood to flow causing high pressure in the portal system. The blood can travel to the veins in the esophagus (esophageal varices), in the skin of the abdomen, and the veins of the rectum and anus to get around the blockages in the liver. The most common cause of portal hypertension is increased resistance to blood flow caused by extensive scarring of the liver in cirrhosis, which is most often due to chronic excessive alcohol intake.

Portal hypertension can be diagnosed through web based system, endoscopic examination, X-ray studies and lab tests. Further treatment is necessary to reduce the risk of recurrent bleeding. The effects of portal hypertension can be managed through diet, medications, endoscopic therapy, surgery or radiology. Once the bleeding episode has been stabilized, treatment options are prescribed based on the severity of the symptoms and how well the liver is functioning. When a person is first diagnosed with variceal bleeding, he/she may be treated with endoscopic therapy or medications. Dietary and lifestyle changes are also important. Endoscopic therapy consists of either sclerotherapy or banding. Sclerotherapy is a procedure performed by a gastroenterologist in which a solution is injected into the bleeding varices to stop or control the risk of bleeding.

V. DISCUSSION

The author has concentrated on Web Based Online Medical Diagnosis System (WOMEDS) based on the previous research and analyses. This web based system is using three-tier architecture system and particularly focused on portal hypertension disease. Portal hypertension is high blood pressure of the portal vein. The portal vein, a major vein in the abdomen, collects nutrient- rich blood from the intestines and delivers it to the liver to nourish it, where it is purified for the body to use. There are reasons why three-tier architecture system plays an important role in Web Based Online Medical Diagnosis System (WOMEDS). It is because the three tier architecture supports flexible implementation and open migration path, improved reusability, improved data access flexibility, supports data driven business logic and supports dynamic changes to system function and structure.

This web based system holds the possible to recover health outcome as soon as possible by providing sufficient information and treatment. By the way, WOMEDS also applying stranded assumption in the improvement of information and communication technologies for the patients' usage whom living with chronic illness. Theoretically, the term Web Based Online Medical Diagnosis system refers to those request or applications that are occupied on a server that is reachable using a Web browser and is therefore reachable from various locations via Web. WOMEDS system has a special feature that can alerts the patients about portal hypertension disease and upcoming appointments. Patients' will answer the first question, and then proceed with the second question. If the system detects severe portal hypertension, pop up message will display which states that the WOMEDS cannot cure the disease but the particular patient need to consult and get the treatment from the doctor or physician But, if the portal hypertension disease is

in an early stage, the patients' can answer all the questions to produce the results and relevant description within four to seven minutes.

WOMEDS links to the medical websites where the patients' can gain information relates to the content of the medicines. In Malaysia, most of the pharmacies recommended the cheap drugs that patient able to get with or without prescription. But some patients probably do not want to take risk with this type of pharmacies. But WOMEDS system will display the results and also the prescriptions. The patients can get the medicines in authorized pharmacies or dispensaries. The patient's information's in the WOMEDS system will be protected by privacy procedures with the strongest protection. The personal health information in the WOMEDS systems will be observed with the Personal= Information Privacy Act that governs the usage of information on WOMEDS database [18].

VI. RESULT

The new system, Web Based Online Medical Diagnosis System (WOMEDS) will be explained in terms of three modules such as registration and administration, diagnosis and treatment and health monitor and tips. While, the two major aspects of feasibility such as technical and operational in feasibility assessment also will be attempted. This system will be initiated by identification of the problems that happen or requirement that needed in the system. Therefore, a system which can manage to analyze the symptoms, give result of the analyzed, and the treatment should be initiated. It is also initiated due to the fact that people do not like to see doctors about health problems because of shyness.

The system must also be able to keep information of the user and their past medical record for reference by the user or their doctors. Through the system, the inference of findings disease can be diagnosed; based on the symptoms that provided. The disease that may be diagnosed will be given as a probability on percentage.

Registration and Administration is the first part in Web based online diagnosis system. There will be two users such as patient and the administrator. Registration and Administration module consist of three sub modules. There are new registration, existing user and database and language option for user to choose. The system has been designed using advance and intelligent techniques that are already in use to help the system to produce the best solution. The system provides the ability to add in increments and to modify application quickly and simply via an intelligent user interfaces. It provides a wealth of possibilities to define field attributes including controls for missing data, data entry restrictions, code lists, data validation rules and many more. Besides that, the language option will be able to give the user the option to choose the desired language and also the language they are comfortable with.

The second part is known as diagnosis and treatment. In this part there will be two type users, the doctor and the patient. As for the doctor, the system will assist them by diagnosing the portal hypertension. This can be done by retrieving information from the patient. Two approaches will be considered in doing the expert system; one is rule based and the other one is case based reasoning. The system will pick whichever reasoning suits best for a particular case. Each patient will have a username and a password. So whenever the patient enters their username and password, the system will get their information from the database and give the appropriate data based on their medical history. The system will ask the patients questions where information can be gained. Once the result (diagnosis) received by the designated patient then the patient can go and get their medicine or if it's necessary then they will meet the doctor. In time, the doctor that was assigned for that certain patient will look through the patient's database to know the up to date patient's health record.

And, the last part is about health monitor and tips. In this part there will be also two types of user. It will be the doctor and the patient. There will be a consultation scheduler that will act as an alert or reminder to the patient for a consultation in a specified duration. The duration for the system to pop alerts will be based on intelligent time optimization. This system also will provide information for patients when they make a

consultation on the best food diet they should be. They also can check their regular health checkup that can be done by themselves with the help of the system.

VII. CONCLUSION

The Web Based Online Medical Diagnosis system is a system that helps the user to get the appropriate information needed regarding hypertension, overall health conditions and in developing a better lifestyle especially in the hospitals management. This system is developed with the upcoming language that is widely used in developing the web or server based system. Besides that, the database will be the Open Database Connectivity (ODBC) that goes well with the language used. The feel of contentment due to the fact that the system was very hard to deal with as risks were immeasurable and also building a system with skill that has not being learned or learned a little some medical terms have been learned in the process of building the system and also the knowledge of medical and biological fields is also improved as well as the knowledge of Information Technology field. In terms of implementation, the subsystem was put together and make sure that it is in working order. Fine tuning of the system is also done as some of the sub system could not be link together at first. The implementation is used to check if it is easy to be used by other people. The purposes are to test and compare its functionalities with almost similar system out in the web. Also information can be gathered about the system so that the minor adjustment or subsystem that was missing can be build and implemented in to the system again. The system is a web based system with some features of calculations, analysis and estimations based on symptoms keyed in by the user. In other words, the system may be described as digitalized medical system. What kind of load can this web based system handle without 'crashing'? - The system is scalable as the load is only dependable on the physical system and not the software itself.

The system adopts user-friendly control interface and the usage of easy words makes the user to operate the system without doubts and difficulties. The openness of the source codes and documentations will make future enhancements and improvements can be done easier. To avoid the waste of time and effort, schedule is planned tightly. Each task was done before the schedule dead line to enable necessary corrections and debugging. Backup copies of the system were made varied by time and stored in different places in order to recover from any defects or data loss. As the system was tested matching the desired input with the desired output thus the system has a certain level of reliable. But there is no protection to the database beside the login page.

VIII. FUTURE DIRECTION

When thinking about future research directions it becomes apparent that the goal needs to be a real clinical integration of the system. This implies a number of changes in the ways that research is done at the moment. It will become more important to offer the complete personalized service including diagnoses, medicine, treatment and combination menu; preparing data connection between the laboratory information system (LIS) and current system, so that the doctors can send laboratory-test request and read test results from the computer. Other than that, appointment reservation in clinics should be implemented. The orders will be connected with the pharmacy system to maintain correctness of the prescription and save waiting time. And, provide clinical decision support of patient care, particularly in the form of active alerts and reminders based on patient data.

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